Hawaii Loa, Nani Ulupau, and Hana Like

The Hawaii Loa (built in 1999), Nani Ulupau (built in 1992) and Hana Like (built in 1992) Family Housing Areas were constructed on undeveloped land many years after chlordane had been banned by the EPA. *Based on this information no soil samples were collected as part of the construction process for these communities, because it is highly unlikely that chlordane and/or other banned pesticides were applied to the soil near these homes.*

Hawaii Loa (Location 5)

The Hawaii Loa Family Housing Area borders the southern and eastern edge of Pu'u Hawaii Loa at MCBH Kaneohe Bay (Location 5). Hawaii Loa was originally constructed in 1999 on undeveloped land and consists of 237 housing units. In 2007 and 2008, the Hawaii Loa Family Housing Area underwent renovation and remodeling. There was no demolition and no soil was disturbed.

Nani Ulupau (Location 6)

The Nani Ulupau Family Housing Area is located between the Kaluapuni and Ulupau Family Housing Areas, encompassing approximately 8.4 acres (Location 6). Nani Ulupau was originally constructed in 1992 on undeveloped land and consisted of 40 housing units In 2008, the Nani Ulupau Family Housing Area underwent remodeling. There was no demolition and no soil was disturbed.

Hana Like (Location 7)

The Hana Like Family Housing Area was originally constructed in 1992 on a former parade ground that did not have any buildings/structures and consists of 276 housing units (Location 7).

Hawaii Department of Health Concluded that it is Extremely Improbable that Resident's Health Concerns Are Linked to Low-Level Residual Pesticides in Soil

As the Hawaii Department of Health (HDOH) recently explained: "**We are not aware of any documented cases of health effects due to exposure at the low levels associated with organochlorine pesticide residues in soil**. In addition, the EALs [described below] have several conservative safety factors to further ensure that there will be no health risk to children who may be potentially exposed to residual pesticide levels in soil. We therefore believe it is **extremely improbable** that residents' health concerns are linked to exposure to potential low-level residual pesticides in soil." (Emphasis added.) The complete HDOH letter can be read at: **http://yourmcbhhousing.com/documents/**

FOR MORE INFORMATION

If you have any questions or concerns, please contact:

Hana Like (Section 802 Housing)

Phone: (808) 257-1282
Email: mcbh.g4.fmly.hsg.fmb@usmc.mil

Forest City

Please contact Forest City through their website at http://yourmcbhhousing.com/contact/

More information on soil management for other Ohana Military Communities can be found at: Forest City:
- http://yourmcbhhousing.com/

More information on pesticides can be found at: Hawaii Department of Health:
- **http://eha-web.doh.hawaii.gov/eha-cma/Downloads/HEER/termiticidefactsheetfinalsept2011.pdf**

Centers for Disease Control and Prevention (CDC) National Biomonitoring Program – Chlordane and Heptachlor Fact Sheets:
- http://www.cdc.gov/biomonitoring/ChlordaneHeptachlor_FactSheet.html
- http://www.cdc.gov/biomonitoring/ChlordaneHeptachlor_BiomonitoringSummary.html

Agency for Toxic Substances & Disease Registry (ATSDR) Chlordane Fact Sheet:
- http://www.atsdr.cdc.gov/toxfaqs/tf.asp?id=354&tid=62

Environmental Protection Agency (EPA):
- Chlordane Hazard Summary Fact Sheet: http://www.epa.gov/ttn/atw/hlthef/chlordan.html
- EPA Preliminary Remediation Goals (PRGs): (http://www.epa.gov/Region9/waste/sfund/prg/index.html)

Marine Corps Base Hawaii: MILCON Housing Projects

Pesticide Soil Management Fact Sheet

May 2014

Marine Corps Base (MCB) Hawaii is committed to ensuring our families are safe while their service members are serving our country at home or overseas. The purpose of this fact sheet is to provide Navy & Marine Corps families with an overview of the use of pesticides in Hawaii, history of the family housing areas constructed under the Military Construction (MILCON) program and a summary of how pesticide soil, if present, was managed to ensure the safety of MCB Hawaii residents. Family housing at MCB Hawaii was constructed under MILCON and through Public-Private Venture. Seven neighborhoods constructed under MILCON are discussed in this fact sheet: Mokapu Court, Kaluapuni, Pa Honua Phase 1 and Phase 2, Hawaii Loa, Nani Ulupau, and Hana Like. Other Fact Sheets provide information for those neighborhoods that were demolished and reconstructed by Ohana Military Communities, LLC (OMC) through a Public-Private Venture (PPV) lease with the Navy.

Use of Pesticides in Hawaii

Chlordane and other similar pesticides are chemicals that were legally used to protect homes and businesses from termites throughout the United States from the late 1940s to 1988 when its use was banned by the United States Environmental Protection Agency because of concerns about damage to the environment and harm to human health. Because Hawaii's climate is very conducive to ground termite infestation, local pest control companies, homeowners, the city and county, and the state and military regularly used chlordane until 1988. The most common treatment method was to apply chlordane, and related pesticides, into the soil beneath and around building foundations. Because chlordane was the most commonly used pesticide to control termites in Hawaii, the City and County of Honolulu has stated that these pesticides can be found "universally" throughout the island. Even though it has been 26 years since the use of chlordane was banned, these pesticides tend to break down slowly in the environment, so residual amounts may be present near housing and businesses throughout the United States, both on and off military installations, including MCB Hawaii.

Just as you find on commonly used store-bought pesticides, fertilizers, and cleaning products, there are common-sense measures you can take to minimize exposure to residual chlordane in family housing areas. These include washing your hands after digging in soil and washing fruits and vegetables that were grown in the area. These are not extraordinary measures but things you should do regardless of whether or not chlordane is in the soil, and regardless of whether you live on or off base.

Background Information

MCB Hawaii (MCBH) Kaneohe Bay occupies the entire 2,951 acre Mokapu Peninsula which is in southeastern O'ahu. It is bordered to the west by Kaneohe Bay, to the north by the Pacific Ocean, to the east by Kailua Bay, and to the south by fishponds.

The seven neighborhoods discussed in this fact sheet are located at MCBH Kaneohe Bay. Mokapu Court, Kaluapuni, and Pa Honua Phase 1 and Phase 2 were originally built in 1957, 1963, 1965, and 1966, respectively. These neighborhoods were replaced with new housing units in 2007, 2006, 1999, and 2002, respectively.
Hawaii Loa and Nani Ulupau were constructed on undeveloped land (land without any previous buildings/structures or agricultural use). Hana Like was constructed on a former parade ground. Hawaii Loa was originally constructed in 1999 and both Nani Ulupau and Hana Like were built in 1992.

Soil Pesticide Management Process

The typical standard specification for all MILCON housing projects at MCBH was that if chlordane-impacted soil was suspected (due to former construction or agricultural use), then contractors could dispose of chlordane-impacted soil off-site

or reuse the soil on-site, beneath the concrete foundations of the new housing units. In addition, the soil could also be consolidated and buried on-site and then covered with at least 6 inches of clean top soil. Chlordane-impacted soil is defined as soil that has chlordane levels greater than the EPA preliminary remediation goal (PRG) of 1.6 parts per million (ppm). All of these activities were coordinated with Pacific Division (Naval Facilities Engineering Command).

Mokapu Court, Kaluapuni, and Pa Honua Phase 1 and Phase 2

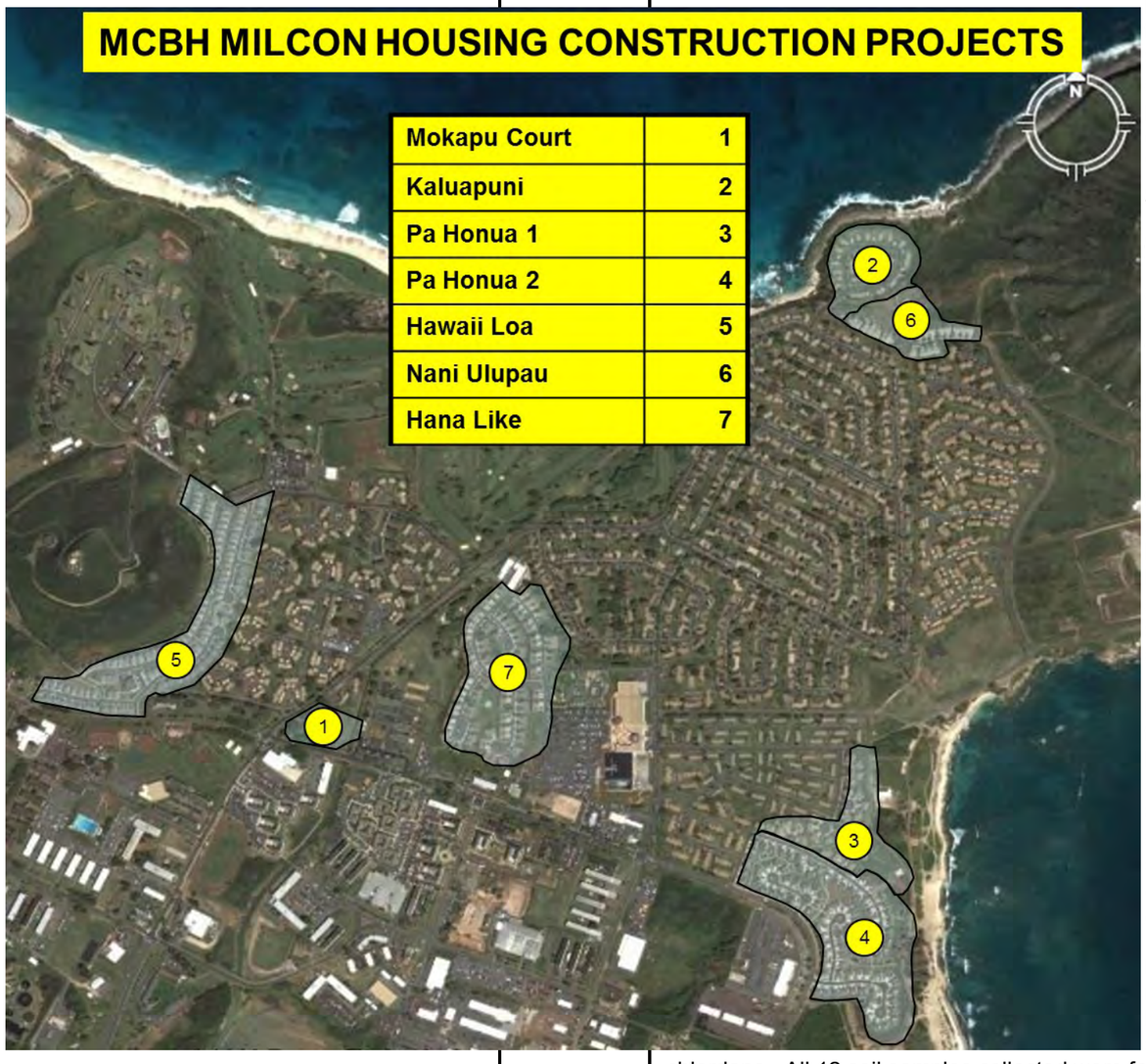
Mokapu Court (Location 1)

The Mokapu Court Family Housing Area encompasses approximately 5.2 acres (Location 1) in the Waikulu neighborhood. The Mokapu Court Family Housing Area was originally constructed in 1957 on undeveloped land and consisted of 9 housing units. In 2007, the 9 housing units were replaced with 14 duplex family units. Since the Mokapu Court Family Housing Area was originally constructed in 1957, chlordane may have been used to treat the houses for termites at this location. Based on this information it was decided that soil samples should be collected and analyzed for chlordane prior to construction of the new units in 2007. A comprehensive soil survey was performed in August 2005 at one of the nine buildings at Mokapu Court to determine if chlordane was present in soil. Soil samples were collected around and beneath an original building and were analyzed for chlordane. Chlordane was not detected in the soil samples (all sampling results were less than the laboratory detection limit of 0.13 parts per billion). *Based on these results, the residual concentrations of pesticides in soil were acceptable and did not require cleanup/remediation prior to construction of the new housing units.*

Kaluapuni (Location 2)

The Kaluapuni Family Housing Area is located on Pond Road and encompasses approximately 7.6 acres (Location 2). The neighborhood was originally constructed in 1963 on undeveloped land and consisted of 30 housing units. In 2006, the 30 housing units were replaced with 32 new housing units. Since the Kaluapuni Family Housing Area was originally constructed in 1963, chlordane may have been used to treat the houses for termites at this location. Based on this information it was decided that soil samples should be collected and analyzed for chlordane prior to construction of the new units in 2006. Soil samples were collected around and beneath some of the original buildings in 2003 and 2005 to determine if chlordane was present in soil.

In 2003, one soil sample was collected from the perimeter of the foundation at one of the original housing units and analyzed for chlordane. The soil sample result was 2.37 ppm which exceeded the 2002 EPA PRG of 1.6 ppm.



In 2005, composite soil samples (a soil sample made up of multiple subsamples from different locations that are combined before submitting to the laboratory for testing) were collected at two of the original housing units. Chlordane was detected at 5.12 and 27.5 ppm, which also exceeded the 2002 EPA PRG of 1.6 ppm.

In May 2005, the 30 housing units at Kaluapuni were demolished and a soil sample was collected after demolition. Chlordane was detected at 0.75 ppm, which was less than the 2002 EPA PRG of 1.6 ppm.

In August 2005, composite soil samples were collected at the former location of two of the original housing units. Chlordane was not detected in the soil samples (all sampling results were less than the detection limit of 0.13 parts per billion). *Based on these results, the residual concentrations of pesticides in the top six inches of soil were acceptable and did not require cleanup/remediation prior to construction of the new housing units.*

Pa Honua 1 and Pa Honua 2 (Locations 3 and 4)

The Pa Honua 1 and Pa Honua 2 Family Housing Areas are located between Mokapu Road and Fort Hase Beach, encompassing approximately 34.3 acres (Locations 3 and 4, respectively). Pa Honua 1 was originally constructed in 1965 on undeveloped land and consisted of 54 housing units. In 1999, the 54 units were replaced with new housing units. Pa Honua 2 was originally constructed in 1966 on undeveloped land and consisted of 184 housing units which were replaced in 2002 with new units. Since the Pa Honua 1 and Pa Honua 2 were originally constructed in the 1965/1966 timeframe, chlordane may have been used to treat the houses for termites at this location. Based on this information it was decided that soil samples should be collected and analyzed for chlordane prior to construction of the new units in 1999 and 2002.

In April 1995, in preparation for the construction to replace the existing housing units for the Pa Honua 1 Family Housing Area, environmental sampling was conducted in areas identified as potentially containing chlordane. Chlordane was not detected in any of the 5 composite soil samples collected from the original housing units. *Based on these results, the residual concentrations of pesticides in soil were acceptable and did not require cleanup/ remediation prior to construction of the new housing units.*

In January 2000, in preparation for the construction to replace the existing housing units for the Pa Honua 2 Family Housing Area, environmental sampling was conducted in areas identified as potentially containing chlordane. All 12 soil samples collected were found to have detectable levels of chlordane ranging from 0.068 to 2.0 ppm. Of the 12 samples, only 2 slightly exceeded the 2002 EPA PRG of 1.6 ppm (1.9 and 2.0 ppm) and the average concentration of all 12 samples was less than the 2002 EPA PRG. *Based on these results (and the fact that the chlordane concentrations in soil would be further reduced during construction by mixing of soils), the residual concentrations of pesticides in soil were acceptable and did not require cleanup/remediation prior to construction of the new housing units.*